

State of California  
The Resources Agency  
Department of Water Resources  
Northern District

RECREATION USE SURVEY OF  
LITTLE LAST CHANCE CREEK, PLUMAS COUNTY

2003

Technical Information Record ND-04-01

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This report was prepared to summarize information collected under SAP Cost Center 100493 to document streamside recreation and fishing use of Little Last Chance Creek below Frenchman Lake. This report has received only limited review; it is intended to internal use and should be considered preliminary and subject to revision.

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## SUMMARY

A recreation use survey of Little Last Chance Creek in Plumas County was conducted during 2003 to estimate the amounts and types of streamside recreation use and angler success. Similar studies were conducted at Little Last Chance Creek in 1988, 1992, 1996, and 2000.

A stratified random sampling procedure was used to sample five miles of Little Last Chance Creek, from Frenchman Dam downstream to the Guidici Ranch Road. Interviews of recreationists, roving use counts, and a creel census were combined to gather information on recreation activities, visitor origin, and angler success.

There were an estimated 102,000 hours of recreation on Little Last Chance Creek between April 26 and November 15, 2003. The most frequently observed activities were camping, walking, sightseeing, fishing, and relaxing. More than 90 percent of the observed use occurred at Chilcoot Campground. Anglers caught and kept an estimated 100 rainbow trout and 350 brown trout (0.18 trout per hour) in 2,500 hours of fishing. Anglers also reported they caught, or caught and released an additional 1,700 trout. The mean length of angler-caught rainbow trout was 26.3 cm and 28.9 cm for brown trout.

A majority of recreational visitors to Little Last Chance Creek came from Nevada (about 85 percent). Visitors also came from 21 California counties; about 5 percent of visitors were from “local” Northeast Counties. The places of residence for anglers differed slightly from those of recreational visitors. About 66 percent of anglers came from Nevada, while 8 percent came from California’s Northeast Counties and 9 percent came from the San Francisco Bay Area.

## INTRODUCTION

Frenchman dam was built in 1961, by the Department of Water Resources, as part of the State Water Project (Figure 1). Its purpose was to regulate Little Last Chance Creek for irrigation in Sierra Valley and to enhance local recreation opportunities (DWR 1957). The downstream release was intended to maintain (but not enhance) the stream fishery. Reservoir releases are regulated to supply downstream water rights and water contracts.

This report describes the fifth recreation use survey of Little Last Chance Creek conducted since Frenchman Dam was built. The purpose of this survey was (1) to estimate the amounts and types of recreation use and angler success occurring along the creek with augmented flow from Frenchman Reservoir, (2) to document the recovery of the creek's fishery since a rotenone treatment and a drought, (3) to compare use with that observed during earlier surveys (Brown 1989; Elkins 1997; Elkins 1998; Nicholas 2003), and (4) to provide additional baseline information prior to implementation of a proposed revision of non-irrigation season minimum flows.

Using a stratified random sampling procedure, the survey combined roving use counts with interviews of recreationists in order to gather information on recreation activities, visitor origin, and angler success. Estimates of use were made for the period of April 26, 2003 to November 15, 2003 (the 2003 Sierra District stream trout-fishing season). This report describes the recreation use survey, creel census, and results. A separate report, prepared by the Department of Fish and Game (DFG), Contract Services Section (Brown 2004), describes a fish population survey conducted in October 2003.

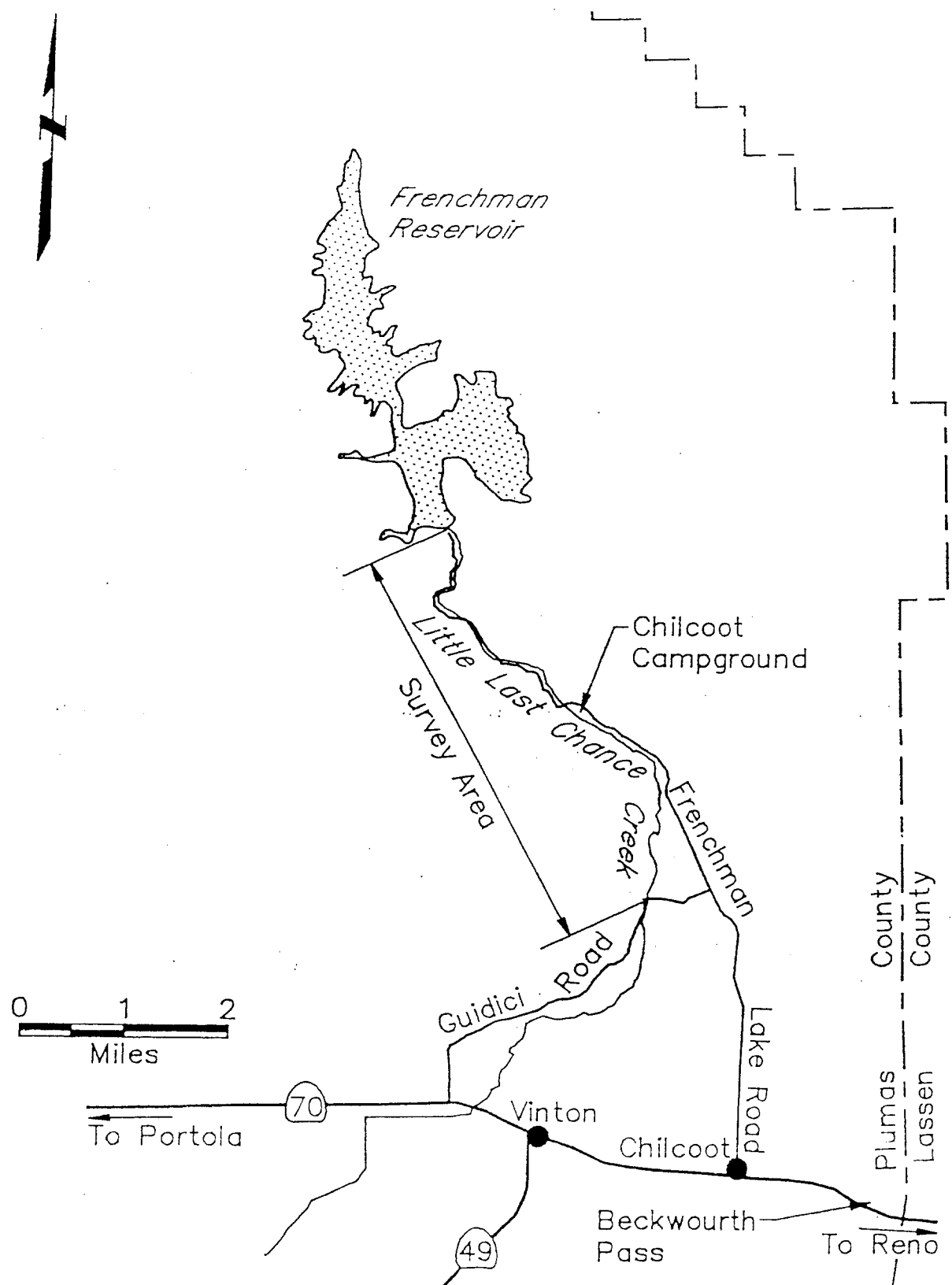


Figure 1 — Frenchman Reservoir and Little Last Chance Creek, Plumas County

## DESCRIPTION OF STUDY AREA

Little Last Chance Creek is a headwater tributary of the Middle Fork Feather River, flowing into and out of Frenchman Lake. Below Frenchman Dam, Little Last Chance Creek winds through a steep, lava-rock canyon for about four miles, and then flows through the sagebrush country of northern Sierra Valley. Average annual runoff from the watershed upstream from the dam (81 sq. mi.) is about 28,000 acre-feet. The survey area included about five miles of Little Last Chance Creek from Frenchman Dam (elevation 5,500 feet) downstream to the Guidici Ranch Road (elevation 5,000 feet).

Frenchman Lake Road (State Route 284) closely follows the creek and provides easy access to it and to camping facilities in Chilcoat Campground, operated by a concessionaire of the U.S. Forest Service. Chilcoat Campground is located about 3 miles downstream from Frenchman Dam and offers 40 campsites (35 drive-in and 5 walk-in), potable water, and restroom facilities in an attractive riparian setting. It is the only developed (and legal) camping area on the creek.

During late spring and summer, streamflows in Little Last Chance Creek below Frenchman Dam fluctuate widely depending on the available water supply and irrigation demands in the Sierra Valley. In 2003, Frenchman Lake did not fill and thus no spill occurred. During most of the stream fishing season, regulated flows in Little Last Chance Creek varied between 3-90 cfs. For roughly the first and last three weeks of the season the flow was as low as 2 cfs.

Frenchman Lake was chemically treated by the California Department of Fish and Game to eradicate northern pike in the spring of 1991. During this project virtually all of Little Last Chance Creek below the dam was poisoned as well. The Department of Fish and Game later restocked the creek with rainbow and brown trout in an effort to restore the fishery. During subsequent electroshocking studies, DWR and DFG determined that the recovery of the fishery was delayed for several years by drought (Brown 1999 and DWR 1998).

## METHODS

### Recreation Use Counts

Use counts were made on randomly selected dates within eight survey strata using the optimum allocation method described by Abramson and Tolladay (1959). Twenty-five days of the 204-day period from April 29 through November 15, 2003 (the Sierra District stream trout season) were surveyed. Five one-hour counts of recreation use were made in the study area for the first half of the survey season, until the end of June. At the beginning of July the survey schedule changed due to travel constraints that eliminated several scheduled survey days and reduced the number of hours surveys could be conducted on the remaining survey days.

The surveys were made from vehicle or on foot, as necessary, to check access and recreation sites. Recreationists (and their vehicles) were counted and recorded by recreation activity. The five daily counts were totaled and multiplied by factors that accounted for recreation use in the daylight periods not counted. Similarly, the resulting daily figures were expanded to estimate total recreation hours for all days in each stratum. Adding the stratum totals provided an estimate of day-use recreation hours for the study period.

### Creel Census and Recreation Interviews

In the hours between use counts, recreation and angler success data were collected through personal interviews. Interviews were conducted on a per-vehicle basis. Length of stay was rounded to whole hours for day users, and nights of stay for overnight users. The activities recreationists intended to participate in during their stay, and their county of residence, were also recorded.

Anglers along Little Last Chance Creek were contacted during 20 of the 25 recreation survey days plus two other days to determine fishing success. The county of residence and length of time spent fishing so far that day (rounded to the nearest quarter-hour) were recorded for each angler contacted. Fish censused were counted, measured (fork length to nearest 0.5 centimeter [cm]), and identified to species. To determine total catch, the average catch per hour (derived from the creel census) was multiplied by estimated total hours of fishing for each stratum.

## RESULTS

### Recreation Use

Total recreation use on Little Last Chance Creek below Frenchman Reservoir was estimated at 102,000 recreation hours ( $\pm 17,000$  hours) for the period April 26 to November 15, 2003. With adjustments to account for the high proportion of overnight use, this is about 11,000 recreation-days, or 12,000 "12-hour visitor-days". Based on counts of recreationists, camping was the major activity, followed by walking, sightseeing, fishing, relaxing, and a variety of miscellaneous activities (Table 1). More than 90 percent of the observed use occurred at Chilcoat Campground. Use counts reflect what people were doing when we counted them, and the approximate number of hours spent on each major activity. They do not provide data on other activities that people pursued at other times during their stay.

Table 1

#### Recreation Hours by Activity Little Last Chance Creek, 2003

Activity	Recreation Hours	Percent
Camping	88,000	86%
Walking	3,200	3%
Sightseeing	3,000	3%
Fishing	2,500	3%
Relaxing	2,200	2%
Miscellaneous*	3,100	3%
Total	102,000	100%

\* Miscellaneous category includes swimming/wading/beach use (900 hours), picnicking (550), bicycling (500), undefined activities (400), children playing (300), hunting (200), outdoor games (100), horse riding (100), and motorcycling (50).



Interviews conducted during the 204-day survey period totaled 281, representing 784 people. The interviews provided more detailed information on activity participation and visitor characteristics. Interviews represented the people in each vehicle. The average number of people per vehicle was 2.79.

About 76 percent of the people interviewed said they were “just relaxing” and 38 percent stated that they planned to fish in the creek during their stay. About 24 percent waded or swam in the creek, or sunbathed nearby. Twenty-eight percent said they “walked for pleasure”. Fourteen percent did some sightseeing along the creek, five percent picnicked somewhere along the creek, and about two percent said they bicycled. Nearly five percent mentioned activities they planned to do at Frenchman Lake, such as pleasure boating, boat fishing, and waterskiing. A few people (about three percent total) also mentioned crafts, rock climbing, playing games, dog training, hunting, and photography. These percentages total nearly 200 percent because most people engaged in more than one activity during their visit.

Fifty-nine percent of the visitors interviewed camped overnight at Chilcoot Campground. The average length of stay was more than four nights (4.59). Thirty-three percent of the visitors interviewed used the stream corridor for day use, and returned home that night. Nearly eight percent of the visitors used the stream corridor for day use and then stayed overnight somewhere in the general area. The average length of day-use visits was 3.28 hours and the harmonic mean length-of-stay was 2.39 hours.

Of those who stayed overnight in the area, most camped at Frenchman Reservoir or a local private campground or resort, while the rest stayed with friends or relatives, or had other accommodations. The average length of stay for those who stayed in the area was about three nights.

Among the groups camping at Chilcoot Campground, 51 percent said they used tents as their overnight accommodations. Twenty-six percent used travel trailers, 15 percent used a motorhome, van, or bus, eight percent used tent trailers, four percent used pickup campers, and four percent slept out. These percentages total more than 100 percent because some people camped with more than one type of equipment.

Most recreational vehicles (85 percent) came to Little Last Chance Creek from Nevada (mostly Reno, Sparks, and Carson City). Visitors also came from 21 California counties, with the highest percentage (three percent) from Plumas County (Figure 2). About one percent came from other states.

### Creel Census Data and Angler Success

One hundred and thirty-two anglers were censused. They had fished a total of 304 hours and creeled 6 rainbow and 43 brown trout. One hundred and fifty-six other trout were also reported caught, or reported caught and then released back into the creek. Observed catch per hour (excluding fish caught and released) for individual anglers ranged from zero to 2.0. About 55 percent of the anglers fished with bait, 27 percent with flies, 2 percent with lures, and 17 percent fished with some combination of bait, flies, and lures.

Total fishing use was estimated at 2,500 hours ( $\pm 500$  hours) or about 800 angler-days, with an estimated catch of 100 rainbow trout (0.04 trout per hour) and 350 brown trout (0.14 trout per hour). Based on the number of fish anglers reported catching, or reported catching and releasing, as many as 1,700 additional trout may have been caught and/or caught and released. Including all fish caught, reported caught, or reported caught and released, angler success was about 0.86 fish per hour. We censused about 12 percent of the estimated hours of fishing use.

The mean fork length of 3 measured rainbow trout was 26.3 cm (10.4 inches) and 28.9 cm (11.4 in) for 34 brown trout (Appendices III and IV). The largest rainbow trout observed was 29.0 cm fork length (11.4 in), and the largest brown trout was 48.0 for length (18.9 in).

The origin of anglers at Little Last Chance Creek was slightly different than that of the general recreationists. About 66 percent were from Nevada. Residents of Plumas County made up 5 percent, and 9 percent came from the San Francisco Bay Area (Figure 3). Fifteen California counties were represented in the creel census.

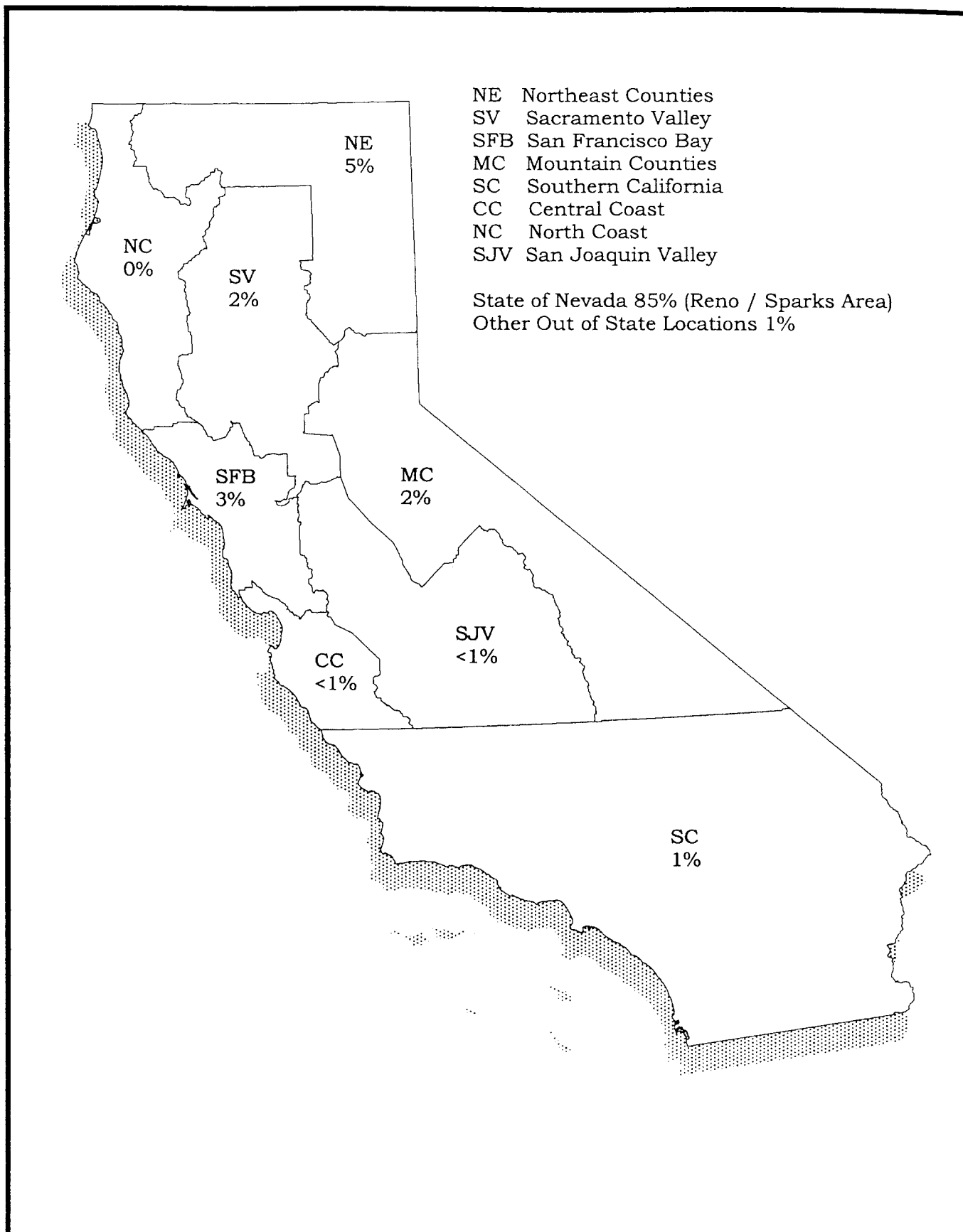


Figure 2 - Little Last Chance Creek Visitor Origin by County Groups, 2003

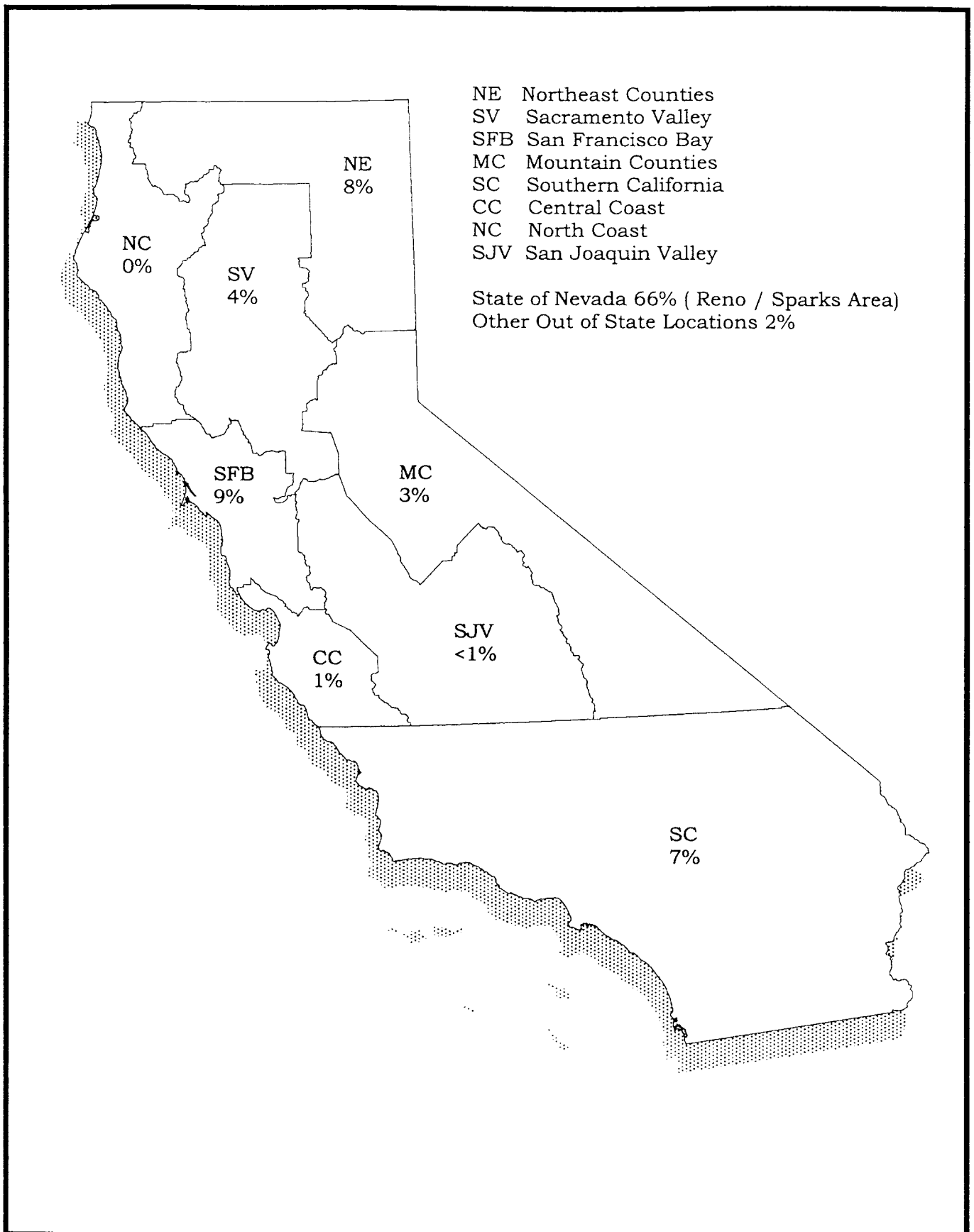


Figure 3 - Little Last Chance Creek Angler Origin by County Groups, 2003

## DISCUSSION

Understanding the limitations of the recreation survey and the creel census helps put the data obtained in the proper perspective. The following sections describe the survey limitations and compare results with those reported from earlier surveys.

### Limitations of Use Counts and Creel Census

Most recreationists using the creek were easily observed during the use counts. Most vehicles along Little Last Chance Creek can be associated with recreationists, ranchers, or U.S. Forest Service workers. However, people were not found for some vehicles during the use count periods. Some difficulty was encountered when making use counts at Chilcoot Campground, because not everyone there was always visible. Some people may have been temporarily out of sight during use count periods; perhaps inside travel trailers, restrooms, or other locations not visible to the surveyor.

In general, much of the recreation use at Chilcoot Campground was not directly related to Little Last Chance Creek. To a large degree, the campground is a place to “get away and relax” for residents of the greater Reno/Sparks urban area. Still, most individuals interviewed indicated that they visited the creek at least once during their stay.

### Comparison of 2003 Survey Results with Earlier Surveys

Total stream recreation in 2003 was much higher than in the past three surveys (Table 2). The higher use in 2003 was due primarily to the number of visitors camping at Chilcoot Campground. The increase in camping at Chilcoot Campground this year may have been influenced by many changes taking place in the area. One possible reason for the increase could be the housing boom taking place in Reno, Sparks, and Carson City. Another factor could be more “baby boomers” retiring, leading to more people recreating. Another possible reason for the large increase could be more people recreating close to home, due to terrorist concerns. Also, Chilcoot Campground is now included in the nation-wide Reserve America reservation system at the website [Reserve USA.com](http://ReserveUSA.com).

Table 2  
Estimated Recreation Hours by Activity, Little Last Chance Creek

Activity	Year				
	1988	1992	1996	2000	2003
Fishing	7,400	3,500	7,000	4,500	2,500
Camping	46,000	46,000	58,000	57,000	88,000
Relaxing	45,000	10,600	4,500	1,400	2,200
Sightseeing	2,200	1,500	1,500	4,300	3,000
Walking	2,900	1,300	3,000	3,800	3,200
Miscellaneous*	9,500	7,100	8,000	3,000	3,100
Totals	113,000	70,000	82,000	74,000	102,000

\* Includes a variety of activities, such as picnicking, camping, bicycling, outdoor games, swimming/wading/beach use, photography/painting, children playing, horse riding, hunting, and motorcycling.

Angler use and estimated catch for 2003 was lower than in any of the previous surveys. The total estimated catch of rainbow trout was only 100 in 2003. The rainbow trout population seems to be decreasing (Table 3) since Frenchman Dam last spilled in 1998. Many large rainbow trout are known to emigrate from the reservoir during such a spill. A spill from Frenchman Lake into Little Last Chance Creek benefits the creek's recreation in that it is a popular attraction for anglers early in the season. Rainbow trout and brown trout were both seen in the creel in 2003, 2000, 1996, and 1988, but only rainbow trout were observed in 1992. There are several factors that could explain why brown trout were absent 1992. Although both species were restocked after the rotenone poisoning in 1991, unusually low stream flows in fall of 1991 may have affected their persistence. Also, only rainbows were planted in 1992.

Table 3  
Comparison of General Recreation, Fishing Use, and  
Angling Quality on Little Last Chance

Activity	Year				
	1988	1992	1996	2000	2003
Recreation Use (Hours)	113,000	70,000	82,000	74,000	102,000
Fishing Use (Hours)	7,400	3,500	7,000	4,500	2,500
Rainbow Trout Caught (Estimated)	3,230	900	900	450	100
Brown Trout Caught (Estimated)	840	0	600	250	350
Angling Quality (trout caught per hour)	0.55	0.26	0.21	0.16	0.18

The method of the conducting the survey in 2003 is another factor that should be discussed. The survey this year was scheduled for 30 days, similar to previous years (2000, 1996, 1992 and 1993). This schedule was followed until July when the survey schedule was changed due to budget reductions ordered by the State of California. Several planned survey days were canceled and the length of all the remaining survey days was shortened. Before the budget reductions, the length of the survey days for the May through August period was 14 hours. In July we changed the survey schedule for the remainder of the season to nine hours per survey day (Appendix II). These changes may have reduced the estimated use for some activities, especially fishing, because we didn't survey early morning or evening hours.

Chilcoot campground is located along Little Last Chance Creek and provides visitors with a camping or picnicking experience in a quiet streamside setting that contrasts with the larger and somewhat noisier campgrounds at Frenchman Lake. Many of the other streamside activities also take place here. The campground usually closes in mid-October, but a broken pipe closed the campground on September 13 in 2003, which severely reduced late-season use along the creek as well as in the campground.

#### ACKNOWLEDGMENTS

Environmental Scientist Margie Graham and Student Assistants Rowland Hickel and Michelle Cederborg occasionally assisted the author in conducting use counts, creel censuses, and interviews during the 2003 season. Thanks to Lori Miles who typed the text and tables. A special thanks to Ralph Hinton (Retired Annuitant) for his comments and suggestions during preparation of this manuscript.

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Appendix I  
 Recreation Survey Schedule for  
 Little Last Chance Creek, Plumas County  
 April 26, 2003, to November 15, 2003

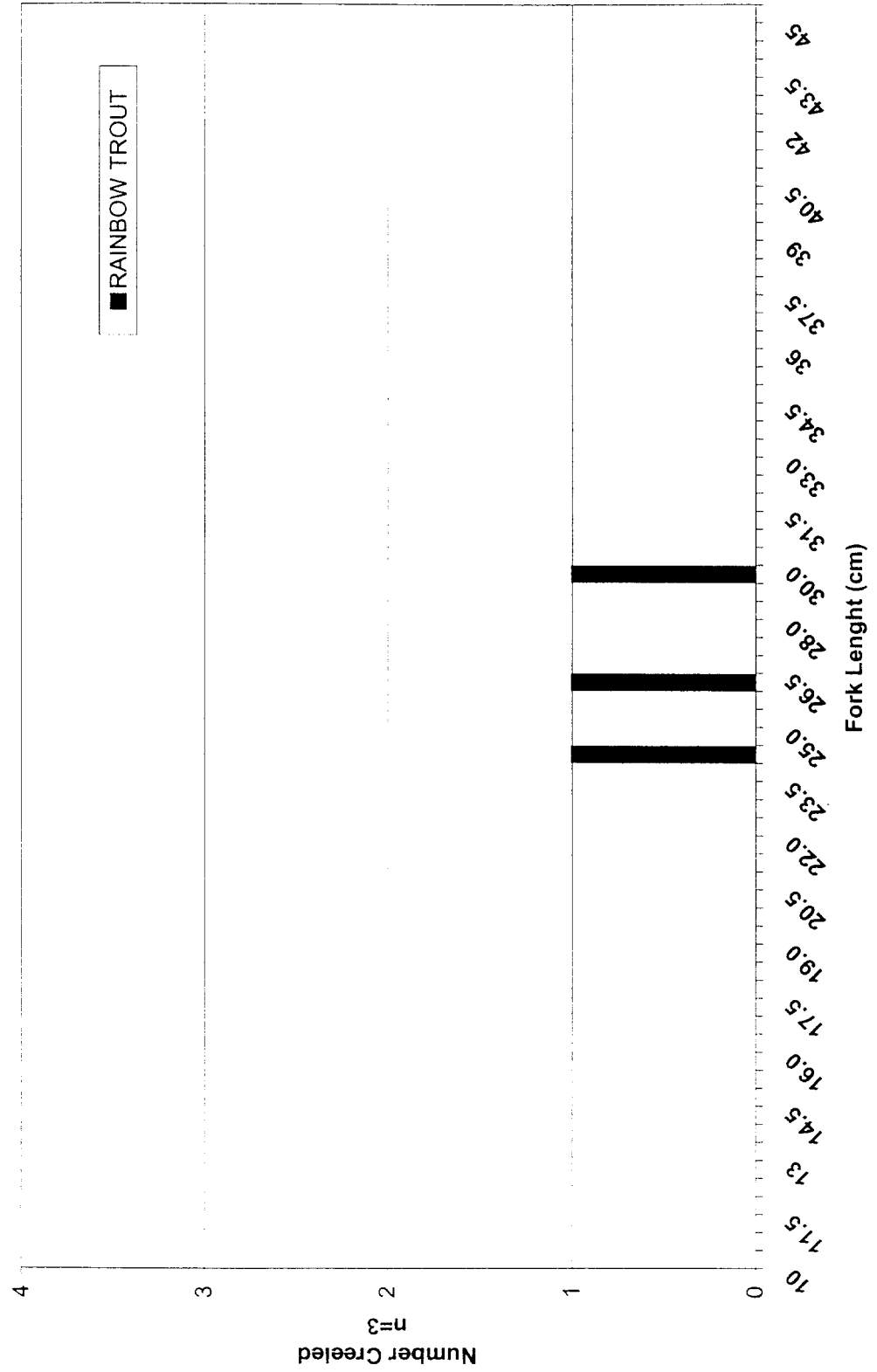
Date	Holiday = HD Weekend = WE Weekday = WD	Survey Stratum
26-Apr 27-Apr	WE WE	I I
18-May 21-May 23-May 24-May 26-May	WE WD WD HD HD	III IV IV II II
04-Jun 06-Jun 08-Jun 11-Jun 28-Jun 29-Jun	WD WD WE WD WE WE	IV IV III IV III III
22-Jul 27-Jul	WD WE	VI V
18-Aug 19-Aug 23-Aug 24-Aug 31-Aug	WD WD WE WE HD	VI VI V V IX
1-Sep 13-Sep 19-Sep	HD WE WD	IX V VII
2-Oct 11-Oct	WD WE	VII VII

## Appendix II

### 2003 Use Count Schedule for Little Last Chance Creek

Date	Daylight Hours	Use Count		Creel Census Time (approx.)
		Count	Time	
April PDT	15-1/2	1 <sup>st</sup>	0730-0830	0800-1200 1500-1900
		2 <sup>nd</sup>	1000-1100	
		3 <sup>rd</sup>	1300-1400	
		4 <sup>th</sup>	1530-1630	
		5 <sup>th</sup>	1830-1930	
May-June PDT	16-1/2	1 <sup>st</sup>	0800-0800	0800-1300 1400-1900
		2 <sup>nd</sup>	1000-1100	
		3 <sup>rd</sup>	1300-1400	
		4 <sup>th</sup>	1600-1700	
		5 <sup>th</sup>	1900-2000	
July-October PDT	12	1 <sup>st</sup>	0730-0830	0800-1200 1300-1700
		2 <sup>nd</sup>	0930-1030	
		3 <sup>rd</sup>	1130-1230	
		4 <sup>th</sup>	1330-1430	
		5 <sup>th</sup>	1530-1630	

APPENDIX III  
 Length-Frequency of Censused Brown Trout  
 Little Last Chance Creek, 2003



APPENDIX IV  
Length-Frequency of Censused Brown Trout  
Little Last Chance Creek, 2003

